

SIEMENS



ENERGY AUTOMATION PRODUCTS

Universal Protection Relay

SIPROTEC 7SX82

[siemens.com/7SX82](https://www.siemens.com/7SX82)

The SIPROTEC 7SX82 is a versatile relay designed for comprehensive protection, control and automation within medium voltage and distribution grids, featuring 3-pole tripping. This universal protection device integrates smoothly into various sectors including utilities, industry and infrastructure, optimizing the power supply chain's performance.



Benefits

- Optimization of investment and operating costs: Time and cost savings during project planning as well as significant reduction of logistics and spare part costs
- Full flexibility until shortly before commissioning, easy function adjustment via the function point manager
- Migration of existing device specific application templates and parameterizations (7SA82, etc.)
- Optimally suited for retrofit applications

Highlights



Cybersecurity in accordance with NERC CIP and BDEW Whitepaper requirement



Full compliance with IEC 61850 Editions 1, 2.0, and 2.1



PQ-Basic: voltage unbalance, voltage changes, overvoltage, dip, interruption, TDD, THD and Harmonics

Protection Functions

- Directional and non-directional overcurrent protection of feeders, with additional functions
- Distance protection for overhead lines and cables, with a wide variety of pickup methods
- Differential protection of overhead lines and cables of all lengths with up to 6-line ends fed from one or more sides
- Motor protection against short circuits, all kinds of thermal over-load, unbalances, and instabilities, and blocked or idle driving conditions
- Detection of ground faults of any type in isolated or arc-suppression-coil grounded power systems
- Reverse functions for capacitor banks, such as current-unbalance, peak overvoltage, overcurrent, and overload protection
- Arc protection
- Overvoltage and undervoltage protection, with all methods
- Frequency protection and frequency-change protection
- Power protection, with all methods
- Process bus functionalities: Merging Unit or PB Client

Select & customize your device from 2 hardware variants and feature catalog

- Up to 23 binary inputs, 16 binary outputs and 8 analog inputs
- Universal power supply DC 24-250V, AC 100-230V, 50 - 60 Hz
- Plug-in modules for all communication properties, Arc-Protection, battery VDC monitoring and transducers
- Load the required functions from the extensive SIPROTEC 5 function library into the device configuration simply by dragging and dropping them with DIGSI 5
- Possible main protection functions: overcurrent protection, distance protection, line differential protection, motor protection, and capacitor protection
- The range of functions that can be used in the device is determined by the specified Function Point Class. If required, simply extend the Function Point Class in a few minutes via the new SIPROTEC Function Point Manager application

For grid operators: easy adaptation when network conditions change after commissioning, e.g. use as line differential protection instead of distance protection

For industrial applications: simple addition of necessary motor or frequency protection functions to the feeder protection

For energy producers: Easy adaptation of device functions when connecting regenerative feeders

Applications

- Protection and control of feeders, lines, motors, and capacitor banks
- Detection and selective 3-pole tripping of short-circuits
- Selective detection of all ground faults
- Arc-suppression Coil (ASC) Control

Automation, control, and monitoring

- Automatic frequency unloading for load shedding in case of underfrequency, considering changed feed-in conditions due to decentralized power generation
- Synchronization of power grids
- Automatics, controls, synchrocheck and protection against switching faults
- Monitoring of the station battery
- Phasor Measurement Unit (PMU)

 [PRO Tips - SIPROTEC 5](#)

 [SIPROTEC 5 Configurator](#)

 [Online Shop - Industry Mall](#)

Siemens AG

Smart Infrastructure
Electrification & Automation
Mozartstrasse 31c,
91052 Erlangen, Germany

Siemens Industry Inc.
3617 Parkway Lane
Peachtree Corners, GA 30092
United States

© Siemens 2024

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.